

First, removing previous images:

```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> docker pull ubuntu:16.04
16.04: Pulling from library/ubuntu
Digest: sha256:9775877f420d453ef790e6832d77630a49b32a92b7bedf330adf4d8669f6600e
Status: Image is up to date for ubuntu:16.04
docker.io/library/ubuntu:16.04
PS C:\WINDOWS\system32> docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
akanezuki/ping       latest          4dc0cc669627   13 minutes ago 170MB
docker/getting-started latest          083d7564d904   2 hours ago    28MB
ubuntu               16.04          9ff95a467e45   3 weeks ago    135MB
PS C:\WINDOWS\system32> docker rmi 083
Untagged: docker/getting-started:latest
Untagged: docker/getting-started@sha256:10555bb0c50e13fc4dd965ddb5f00e948ffa53c13ff15dcdc85b7ab65e1f240b
Deleted: sha256:083d7564d90469bdf28aaee441c451d447283ebff0c8d465e33be94e79b4088
Deleted: sha256:65370637d850735d17589bf0d35332f670eebc14a61be74c12c20e1b41de5f7d
Deleted: sha256:647e026ef5882b8f379eda6ba6525b1d8ebaec1e910edfdfe1c939bb4b544056
Deleted: sha256:d2c1f1a6bef671794baec7b3f8925362c541904a8bfae59896d382088969e391
Deleted: sha256:4e500d659dc837c35ccf7856cdfa61869a404534e41d932f84757677084d846f
Deleted: sha256:c97589037e8281e55fb38ce43080bd818f4a46c6127814e39de44f21450b69d1
Deleted: sha256:9abdae8081d65d7b544be57ff757bb82dcbe96e97e52c72b2d239106d13a0460
Deleted: sha256:223b707d55c2ca3ddf4f7faa0fec206cd930508c2eb8ebfd361b8f2047e8782
Deleted: sha256:b2d5eeeaba3a22b9b8aa97261957974a6bd65274ebd43e1d81d0a7b8b752b116
PS C:\WINDOWS\system32> docker rmi 4dc
Untagged: akanezuki/ping:latest
Deleted: sha256:4dc0cc66962709eddba41bf079345c54e75ee618e5db117f7df4e8ffa6ebe255
Deleted: sha256:389547084994c3eda25ff8b11243677a3e3b3ce59715064f5bbdd645983c432
PS C:\WINDOWS\system32> docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
ubuntu               16.04          9ff95a467e45   3 weeks ago    135MB
PS C:\WINDOWS\system32>
```

Changing the file contents of Dockerfile:

```
Dockerfile - Notepad
File Edit Format View Help
FROM ubuntu:16.04
LABEL author="Michael Medrano"

RUN apt-get update

RUN apt-get install -y iputils-ping
```

Moving to git bash because powershell does not recognize the “touch” command:

```
micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_fe
ature_activity03)
$ docker pull ubuntu:16.04
16.04: Pulling from library/ubuntu
Digest: sha256:9775877f420d453ef790e6832d77630a49b32a92b7bedf330adf48d669f6600e
Status: Image is up to date for ubuntu:16.04
docker.io/library/ubuntu:16.04

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_fe
ature_activity03)
$ touch Dockerfile

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_fe
ature_activity03)
$ docker build -t 'medrano/ping'
"docker build" requires exactly 1 argument.
See 'docker build --help'.

Usage: docker build [OPTIONS] PATH | URL | -

Build an image from a Dockerfile

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_fe
ature_activity03)
$ docker build -t 'medrano/ping'.
invalid argument "medrano/ping." for "-t, --tag" flag: invalid reference format
See 'docker build --help'.

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_fe
ature_activity03)
$ docker build -t 'medrano/ping' .
[+] Building 66.1s (7/7) FINISHED
=> [internal] load build definition from Dockerfile 0.1s
=> => transferring dockerfile: 150B 0.0s
=> [internal] load .dockerignore 0.1s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/ubuntu:16.04 0.0s
=> [1/3] FROM docker.io/library/ubuntu:16.04 0.1s
=> [2/3] RUN apt-get update 57.6s
=> [3/3] RUN apt-get install -y iputils-ping 8.0s
=> exporting to image 0.2s
=> => exporting layers 0.2s
=> => writing image sha256:727aad076c40dbf90dd7a49af17ec59493994bc85a9a9ec0972c0bba44ccdb1a 0.0s
=> => naming to docker.io/medrano/ping 0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_fe
ature_activity03)
$ |
```

I noticed that only 3 steps took place as compared to the 4 steps shown in the instructions.

Running the added commands in Dockerfile:

```
*Dockerfile - Notepad
File Edit Format View Help
FROM ubuntu:16.04
LABEL author="Michael Medrano"

RUN apt-get update

RUN apt-get install -y iputils-ping

RUN apt-get clean \
    && cd /var/lib/apt/lists && rm -fr *Release* *Sources* *Packages* \
    && truncate -s 0 /var/log/*log
```

Still no change in filesize:

```
micha@DESKTOP-MKIDJGL MINGW64 /C/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization
ature_activity03)
$ docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
medrano/ping        latest          727aad076c40   4 minutes ago   170MB
ubuntu              16.04          9ff95a467e45   3 weeks ago     135MB

micha@DESKTOP-MKIDJGL MINGW64 /C/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization
ature_activity03)
$ docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
medrano/ping        latest          727aad076c40   8 minutes ago   170MB
ubuntu              16.04          9ff95a467e45   3 weeks ago     135MB

micha@DESKTOP-MKIDJGL MINGW64 /C/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization
ature_activity03)
$ .....
```

Updating the final Dockerfile:

```
Dockerfile - Notepad
File Edit Format View Help
FROM ubuntu:16.04
LABEL author="Michael Medrano"

ENV PING_TARGET "google.com"

RUN apt-get update \
    && apt-get install -y iputils-ping \
    && apt-get clean \
    && cd /var/lib/apt/lists && rm -fr *Release* *Sources* *Packages* \
    && truncate -s 0 /var/log/*log

CMD ["sh", "-c", "ping $PING_TARGET"]
```

## Building and running the final Dockerfile:

```
micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_feature_activity03)
$ docker build -t 'medrano/ping' .
[+] Building 64.3s (6/6) FINISHED
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 360B                                              0.0s
=> [internal] load .dockerignore                                                 0.0s
=> => transferring context: 2B                                                  0.0s
=> [internal] load metadata for docker.io/library/ubuntu:16.04                 0.0s
=> CACHED [1/2] FROM docker.io/library/ubuntu:16.04                            0.0s
=> [2/2] RUN apt-get update && apt-get install -y iputils-ping && apt-get clean && cd /var/lib/apt/lists && rm -f 64.1s
=> exporting to image                                                            0.1s
=> => exporting layers                                                            0.1s
=> => writing image sha256:fffd4bad69719aad24694bee2a26897913dcbeda96a7e35b3a6934f24df8e6e6e 0.0s
=> => naming to docker.io/medrano/ping                                          0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_feature_activity03)
$ docker run -it medrano/ping
PING google.com (142.250.204.46) 56(84) bytes of data.
64 bytes from 142.250.204.46: icmp_seq=1 ttl=37 time=23.4 ms
64 bytes from 142.250.204.46: icmp_seq=2 ttl=37 time=24.0 ms
64 bytes from 142.250.204.46: icmp_seq=3 ttl=37 time=23.8 ms
64 bytes from 142.250.204.46: icmp_seq=4 ttl=37 time=23.9 ms
64 bytes from 142.250.204.46: icmp_seq=5 ttl=37 time=23.6 ms
64 bytes from 142.250.204.46: icmp_seq=6 ttl=37 time=23.5 ms
64 bytes from 142.250.204.46: icmp_seq=7 ttl=37 time=24.0 ms
64 bytes from 142.250.204.46: icmp_seq=8 ttl=37 time=23.8 ms
^C
--- google.com ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7009ms
rtt min/avg/max/mdev = 23.424/23.793/24.032/0.259 ms

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_feature_activity03)
$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
medrano/ping        latest             ffd4bad69719       28 seconds ago     139MB
<none>              <none>            727aad076c40       14 minutes ago     170MB
ubuntu              16.04             9ff95a467e45       3 weeks ago        135MB

micha@DESKTOP-MKIDJGL MINGW64 /C:/Users/micha/OneDrive/Documents/GitHub/ME8_Containerization_and_Docker/3-building_images (201804341_feature_activity03)
$ |
```

I noticed that the build time was much faster and the size was smaller. I also noticed that there was a blank image called <none> that still consumed space which seems to be what remained of the previous dockerfile image.